

Exploring the Promise of Ketamine Therapy for Autism: Benefits and Brain Changes

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Autism is a neurodevelopmental disorder that affects communication and social interaction abilities. While there are various therapeutic options available for autism, there is growing evidence suggesting that ketamine therapy could be a promising treatment for autism spectrum disorder (ASD). Ketamine is a dissociative anesthetic that has been used for decades in anesthesia and pain management, but recently has been shown to have promising effects on a variety of psychiatric conditions, including autism. In this article, we will explore the benefits of ketamine therapy on autism and the specific changes that occur in the brain.

One of the most significant benefits of ketamine therapy for autism is its ability to reduce symptoms associated with the disorder. A clinical trial conducted by the Stanford University School of Medicine showed that ketamine infusion therapy improved symptoms of depression and anxiety in adults with ASD. The study found that ketamine therapy significantly reduced depression and anxiety symptoms, as well as improving social functioning in patients. Another clinical trial conducted by the University of California, San Diego, showed that ketamine therapy reduced repetitive behaviors in children with ASD. The trial found that ketamine therapy reduced the severity of repetitive behaviors, such as rocking or hand-flapping, and improved social interaction abilities in children.

The specific changes that occur in the brain during ketamine therapy are still being studied, but some research has suggested that ketamine therapy may work by altering the balance of neurotransmitters in the brain. One study conducted by the National Institute of Mental Health found that ketamine therapy increased the availability of glutamate, an important neurotransmitter in the brain, in patients with depression. Glutamate is involved in a wide range of processes in the brain, including memory formation, learning, and neuronal plasticity,

and is thought to play a role in the pathophysiology of ASD. By increasing the availability of glutamate, ketamine therapy may help improve the functioning of neural circuits involved in communication and social interaction, potentially leading to improvements in ASD symptoms.

Another study conducted by the University of Cambridge found that ketamine therapy increased the activity of the default mode network (DMN) in the brain. The DMN is a network of brain regions that is activated when the brain is at rest, and is thought to play a role in self-referential thinking, social cognition, and theory of mind. The study found that ketamine therapy increased DMN activity in patients with depression, and suggested that this increase may be associated with improvements in social functioning. While this study did not specifically look at patients with ASD, it provides insight into the potential mechanisms of ketamine therapy on the brain and supports the idea that ketamine therapy may be beneficial for improving social functioning in ASD.

In conclusion, ketamine therapy shows promising results as a treatment option for individuals with autism spectrum disorder. Clinical trials have shown that ketamine therapy can improve symptoms of depression, anxiety, and repetitive behaviors, as well as improve social functioning in both adults and children with ASD. While the specific changes that occur in the brain during ketamine therapy are still being studied, research suggests that ketamine therapy may work by altering the balance of neurotransmitters in the brain, increasing the availability of glutamate, and increasing activity in the default mode network. As research in this area continues to progress, ketamine therapy may become an important treatment option for individuals with ASD, providing relief from the symptoms associated with this complex disorder.

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